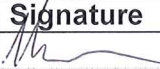
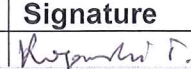


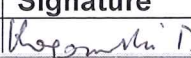
TOOL SUMMARY FORM (PER TOOL)

[illegible]


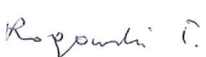
SINGLE TEST RECORD FORM

Test No: 1_1	Profile edition No: 1	Tool: Cimphony	Score: 4	
Test files: ENTSO-E Test Files				
Import		Export		
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml				
ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml				
ENTSO-E16nodes_part_BE_v5July_EQ.xml				
ENTSO-E16nodes_part_BE_v5July_TP.xml				
ENTSO-E16nodes_part_BE_v5July_SV.xml				
Comments/Results/Issues:				
SubGeographicalRegion ELIA-Anvers				
Substation Anvers				
VoltageLevel ANVER220 instance data checked				
Instance counts checked				
Screenshot for solved power flow included				
Supplementary files:				
Profile1Test1-BE-LoadFlowResults.png				
Date	Vendor	Test witness		
11/7/2011	Name	Signature	Name	Signature
	Alan McMorran		Tomasz Rogowski	


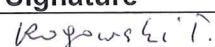
SINGLE TEST RECORD FORM

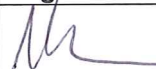

Test No: 1-2	Profile edition No: 1	Tool: Cimphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_NL_v5July_EQ.xml ENTSO-E16nodes_part_NL_v5July_TP.xml ENTSO-E16nodes_part_NL_v5July_SV.xml			
Comments/Results/Issues:			
Instance Counts for ACLineSegments, BaseVoltages, EnergyConsumers and verified instance object values for TransformerWinding with PhaseTapChanger			
Screenshot for solved power flow included			
Supplementary files: Profile1Test1-NL-LoadFlowResults.png			
Date	Vendor	Test witness	
11/7/2011	Name	Name	Signature
	Alan McMorran	Tomáš Rogowski	



SINGLE TEST RECORD FORM

Test No: 2_1	Profile edition No: 1	Tool: Cimphony	Score: 4	
Test files: ENTSO-E Test Files				
Import		Export		
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_NL_v5July_EQ.xml ENTSO-E16nodes_part_NL_v5July_TP.xml ENTSO-E16nodes_part_NL_v5July_SV.xml		ENTSOE_16_NL_OGS_11J17h_UCTE_EQ.xml ENTSOE_16_NL_OGS_11J17h_UCTE_TP.xml ENTSOE_16_NL_OGS_11J17h_UCTE_SV.xml		
Comments/Results/Issues:				
Instance counts verified in CIMDesk Validation passed for exported EQ,TP,SV files Instances checked				
Supplementary files:				
Test no2_validationNL_MAS.doc				
Date	Vendor		Test witness	
11/7/2011	Name	Signature	Name	Signature
	Alan McMorran		Tomasz Rogowski	

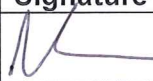
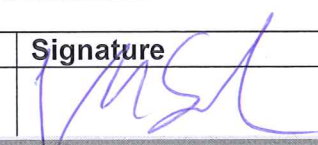
SINGLE TEST RECORD FORM

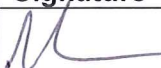
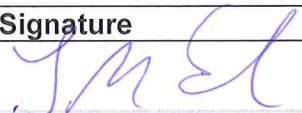
Test No: 2 -2		Profile edition No: 1		Tool: CIMphony		Score: 4	
Test files: ENTSO-E Test Files							
Import				Export			
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_BE_v5July_EQ.xml ENTSO-E16nodes_part_BE_v5July_TP.xml ENTSO-E16nodes_part_BE_v5July_SV.xml				ENTSGE_16_BE_OGS_11J17h_UCTE_EQ.xml ENTSGE_16_BE_OGS_11J17h_UCTE_TP.xml ENTSGE_16_BE_OGS_11J17h_UCTE_SV.xml			
Comments/Results/Issues:							
Instance counts verified in CIMDesk Validation passed for exported EQ,TP,SV files Instances checked including verification of rdf:ID persistence and name matching in BaseVoltage and TopologicalNode							
Supplementary files:							
Test no2_validationBE_MAS.doc							
Date	Vendor		Test witness				
11/7/2011	Name	Signature	Name	Signature			
	Alan McMorran		Tomasz Rogowski				


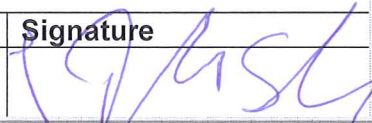
Test No: 3	Profile edition No: 1	Tool: CIMphony	Score: 4	
Test files: ENTSO-E Test Files				
Import		Export		
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_BE_v5July_EQ.xml ENTSO-E16nodes_part_BE_v5July_TP.xml ENTSO-E16nodes_part_BE_v5July_SV.xml				
Comments/Results/Issues:				
Performed power flow on Belgian model, results compared with Siemens ODMS results in ODMS_Loadflow_BE.pdf. Screenshot of results taken and added as LoadFlowResult-BE-OGS-12J10h.png				
Supplementary files:				
LoadFlowResult-BE-OGS-12J10h.png				
Date	Vendor		Test witness	
12/7/2011	Name	Signature	Name	Signature
	Alan McMorran		Chris Nendick	

Test No: 4	Profile edition No: 1	Tool: Cimphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_BE_v5July_EQ.xml ENTSO-E16nodes_part_BE_v5July_TP.xml ENTSO-E16nodes_part_BE_v5July_SV.xml		ENTSGE_16_BE_OGS_MOD_12J10h_UCTE_TP.xml ENTSGE_16_BE_OGS_MOD_12J10h_SV.xml .	
Comments/Results/Issues:			
<p>Modified BE file to mark Terminal at Shunt S2 as being connected=false. Power flow was then run and voltage dropped at bus B1 by 11KV. Topology file was exported (changed connected status verified manually in file), State Variable results for power flow were also exported</p>			
Supplementary files:			
ModifiedLoadFlowResult-BE-OGS-12J10h.png – power flow results screenshot			
Date	Vendor		Test witness
12/7/2011	Name	Signature	Name
	Alan McMorran		Chris Nendick
			

Test No: 5	Profile edition No: 1	Tool: CIMphony	Score: 4																		
Test files: ENTSO-E Test Files																					
Import		Export																			
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_BE_v5July_EQ.xml ENTSO-E16nodes_part_BE_v5July_TP.xml ENTSO-E16nodes_part_BE_v5July_SV.xml		ENTSO-E_16_BE_OGS_12J15h_SV.xml																			
Comments/Results/Issues:																					
Modified Generator G1 from 90MW to 100MW, both EnergyConsumers had 5MW added Power flow ran successfully, screenshot taken, SV file exported.																					
<div style="border: 1px solid black; padding: 5px;"> <div style="display: flex; justify-content: space-between; align-items: center;"> Model View <div style="text-align: right;"> </div> </div> <div style="margin-top: 10px;"> <p>Version: http://iec.ch/TC57/2009/CIM-schema-cim14# Type: State Variables</p> <p>Source: C:\Svein\IOP July 2011\Open Grid System\1st_Profile\Test 5\ENTSO-E_16_BE_OGS_12J15h_SV.xml Loaded at: Tue Jul 12 15:40:58</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Class</th> <th># of Objects</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>SvPowerFlow</td> <td>23</td> <td>State variable for power flow.</td> </tr> <tr> <td>SvShuntCompensatorSections</td> <td>2</td> <td>State variable for the number of sections in service for a shunt compensator.</td> </tr> <tr> <td>SvTapStep</td> <td>4</td> <td>State variable for transformer tap step. Normally a profile specifies only one of the attributes "position" or "continuousPosition".</td> </tr> <tr> <td>SvVoltage</td> <td>478</td> <td>State variable for voltage.</td> </tr> <tr> <td>FullModel</td> <td></td> <td></td> </tr> </tbody> </table> <div style="margin-top: 10px; text-align: center;"> <div style="border: 1px solid gray; padding: 5px; display: inline-block;"> No errors or inconsistencies are detected! </div> <div style="margin-top: 5px; text-align: center;"> <input type="button" value="OK"/> </div> </div> </div> </div>				Class	# of Objects	Description	SvPowerFlow	23	State variable for power flow.	SvShuntCompensatorSections	2	State variable for the number of sections in service for a shunt compensator.	SvTapStep	4	State variable for transformer tap step. Normally a profile specifies only one of the attributes "position" or "continuousPosition".	SvVoltage	478	State variable for voltage.	FullModel		
Class	# of Objects	Description																			
SvPowerFlow	23	State variable for power flow.																			
SvShuntCompensatorSections	2	State variable for the number of sections in service for a shunt compensator.																			
SvTapStep	4	State variable for transformer tap step. Normally a profile specifies only one of the attributes "position" or "continuousPosition".																			
SvVoltage	478	State variable for voltage.																			
FullModel																					
Supplementary files:																					
LoadFlowResultsProfile1ModifiedBE.png – power flow results screenshot CIMdesk_SV_Validation.PNG – CIMDesk validation																					
Date	Vendor		Test witness																		
12/7/2011	Name	Signature	Name	Signature																	
	Alan McMorran		Svein Olsen																		

Test No: 6	Profile edition No: 1	Tool: Cimphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_NL_v11July_EQ.xml ENTSO-E_16_CR_12J15h_NL_TP.xml ENTSO-E_16_CR_12J15h_NL_SV.xml			
Comments/Results/Issues:			
<p>ENTSO-E Boundary EQ and TP were loaded along with NL EQ file from standard test files CESI CRESO export from Test 4 was used for TP and SV. TP file was added then SV file.</p> <p>Powerflow was executed and converged successfully. Results were compared with CESI, voltages, generation and line flows matched within tolerances.</p>			
Supplementary files:			
LoadFlowResults_CP.png – Cimphony power flow results screenshot			
Creso_Data_summary_test_04_1.pdf - CESI			
Date	Vendor		Test witness
14/7/2011	Name	Signature	Name
	Alan McMorran		Jörg Michael Schmidt
			

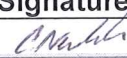
Test No: 7	Profile edition No: 1	Tool: Cimphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_NL_v11July_EQ.xml ENTSO-E16nodes_part_NL_v11July_TP.xml ENTSO-E_16_CR_12J15h_NL_SV.xml			
Comments/Results/Issues:			
<p>ENTSO-E Boundary EQ and TP were loaded along with NL EQ and TP files from standard test files</p> <p>CESI CRESO export from Test 5 was used SV which was added to loaded set.</p> <p>Powerflow was executed and converged successfully.</p> <p>Results were compared with CESI, voltages, generation and line flows matched within tolerances.</p>			
Supplementary files:			
LoadFlowResult_1_7_CP.png – Cimphony power flow results screenshot			
Creso_Data_summary_test_04_1.pdf - CESI			
Date	Vendor		Test witness
14/7/2011	Name	Signature	Name
	Alan McMorran		Jörg Michael Schmidt
			



Test No: 9	Profile edition No: 1	Tool: CIMphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_4_May_2011_EU_EQ.xml ENTSO-E_Boundary_Set_4_May_2011_EU_TP.xml ENTSO-E16nodes_part_NL_v11July_EQ.xml ENTSO-E16nodes_part_NL_v11July_TP.xml ENTSO-E16nodes_part_BE_v5July_EQ.xml ENTSO-E16nodes_part_BE_v5July_TP.xml ENTISOE_16_BE_OGS_MOD_12J10h_UCTE_TP.xml ENTISOE_16_BE_OGS_MOD_12J12h_UCTE_SV.xml		ENTISOE_16_CP_3_14J12h.zip	
Comments/Results/Issues:			
<p>ENTSO-E Boundary EQ and TP were loaded along with NL EQ and TP files and BE EQ and TP from standard test files</p> <p>Powerflow was executed and converged successfully. Export of results as single SV file along with BE EQ & TP, NL EQ & TP and Boundary EQ & TP in single zip file (expanded to verify contents)</p> <p>Replaced TP and SV for Belgium with TP & SV files from Test 4. Loadflow ran and converged successfully.</p>			
Supplementary files:			
LoadflowResult_CP_1_9.png ModifiedLoadFlowResult_CP_1_9.png			
Date	Vendor		Test witness
14/7/2011	Name	Signature	Name
	Alan McMorran		Jörg Michael Schmidt
			

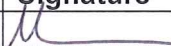
TOOL SUMMARY FORM (PER TOOL)

Vendor/Tool: <i>Open Grid Systems / CDMPhoux.</i>				Profile edition No: <i>2</i>	
Witnessed by					
Name		Signature		Name	
1. <i>Chris Hendrick</i>		<i>[Signature]</i>		9.	
2. <i>Svein Olsen</i>		<i>[Signature]</i>		10.	
3. <i>Jörg M. Schmidt</i>		<i>[Signature]</i>		11.	
4. <i>Alexei Karpatchev</i>		<i>[Signature]</i>		12.	
5.				13.	
6.				14.	
7.				15.	
8.				16.	
Performed tests					
Test No	Score	Test No	Score	Test No	Score
<i>1</i>	<i>4</i>	<i>33</i>	<i>4</i>		
<i>2</i>	<i>4</i>				
<i>3</i>	<i>4</i>				
<i>4</i>	<i>4</i>				
<i>5</i>	<i>4</i>				
<i>7</i>	<i>4</i>				
<i>9</i>	<i>4</i>				
<i>10</i>	<i>4</i>				
<i>11</i>	<i>4</i>				
<i>12</i>	<i>4</i>				
<i>13</i>	<i>4</i>				
<i>14</i>	<i>4</i>				
<i>30</i>	<i>4</i>				
<i>31</i>	<i>4</i>				
<i>32</i>	<i>4</i>				
Comments:					
Date		Vendor		ENTSO-E	
<i>15.07.2011</i>		Name		Name	
		Signature		Signature	
		<i>Alan McMoran</i>		<i>Charles Ivanov</i>	
		<i>[Signature]</i>		<i>[Signature]</i>	

SINGLE TEST RECORD FORM

Test No: 1	Profile edition No: 2	Tool: CIMphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip			
Comments/Results/Issues:			
<p>Two zip files loaded, boundary then MAS. Datasets merged within tool, visually verified by navigating through model associations (GeographicalRegion->SubGeographicalRegion->Substation->VoltageLevel etc.)</p> <p>Power flow run and converted successfully.</p>			
Supplementary files:			
Profile2BelgiumLoad.png			
Date	Vendor	Test witness	
12/7/2011	Name	Name	Signature
	Alan McMorran	Chris Nendick	

Test No: 2	Profile edition No: 2	Tool: Cimphony	Score: 4	
Test files: ENTSO-E Test Files				
Import		Export		
ENTSO- E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSOE_16_BE.zip		ENTSOE_16_BE_OGS_12J14h.zip		
Comments/Results/Issues:				
<p>Two zip files loaded, boundary then MAS. Datasets merged within tool, visually verified by navigating through model associations (GeographicalRegion->SubGeographicalRegion->Substation->VoltageLevel etc.)</p> <p>Export of TP, SV and EQ into single Zip file.</p>				
Supplementary files:				
Date	Vendor		Test witness	
12/7/2011	Name	Signature	Name	Signature
	Alan McMorran		Chris Nendick	

Test No: 3	Profile edition No: 2	Tool: Cimphony	Score: 4
Test files: ENTSO-E Test Files			
Import		Export	
ENTSO-E_Boundary_Set_28_June_2011_2ndEdition_EU.zip ENTSGE_16_BE.zip			
Comments/Results/Issues:			
<p>Two zip files loaded, boundary then MAS. Datasets merged within tool, visually verified and power flow was executed.</p> <p>Results compared with Siemens results (from their Profile 2 tests 1 & 3), line flows, bus voltage and angles compared.</p>			
Supplementary files:			
Profile2LoadflowBE.png			
Date	Vendor	Test witness	
12/7/2011	Name	Signature	Signature
	Alan McMorran		Chris Nendick
			